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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/612,040 | 07/03/2003 | Myung-Ryul Choi | 1293.1733 | 4263 |

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| EXAMINER | |
|---|---|
| CHEN, TIANJIE | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2652 | |

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/612,040 | CHOI ET AL. | |
| | Examiner | Art Unit | |
| | Tianjie Chen | 2652 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☒ Claim(s) *10-12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20030813&20040719*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

# *Non-Final Rejection*

## *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

## *Specification*

2. The disclosure is objected to because of the following informalities:

- In section [0038], line 5; "about" should be changed to --above--.
- In section [0038], line 9; "larger" should be changed to --higher--.

Appropriate correction is required.

## *Claim Objections*

3. Claim10 is objected to because of the following informalities:

In claim 10, line 3; "larger" should be changed to --higher--.

Appropriate correction is required.

## *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morinaga (JP 8-203259A) in view of Park et al (EP 1 207 532 A2).

Claims 1 and 2, Morinaka shows a disk tray 2 for a disk drive in Fig. 5 that slides in and out of the disk drive 1, the disk tray including one or more resonators 10 mounted on a lower surface of the disk tray (Figs. 1-3) to reduce noise, wherein each

of the one or more resonators includes: a through hole penetrating the disk tray and operating as an entrance and a bottle neck of each resonator (Fig. 3); and a resonance container surrounding the through hole and having a predetermined volume.

Morinaka does not explicitly show that the resonators selectively reduce noise of a predetermined frequency band; and the predetermined frequency band being determined according to an area of a profile of the through hole, a length of the bottle neck of the through hole, and a volume of the resonance container.

Park et al shows a resonator 40, which has roughly a same natural resonance frequency as the movable plate. ([0017], lines 3-4) thus effectively reduce a vibration (noise) generated when a disk spins ([0007]). One of ordinary skill in the art would have been motivated to use the resonator taught by Park et al to replace Morinaka's resonator thus effectively reducing the vibration (noise) generated in the device. In thus constructed device, the resonators selectively reduce noise of a predetermined frequency band; and it is also well known in the art that the predetermined frequency band is inherently determined according to an area of a profile of the through hole, a length of the bottle neck of the through hole, and a volume of the resonance container.

Claim 5, as described above, Morinaka and park et al show a disk drive including: a disk tray that slides in and out of the disk drive and on which a disk is placed; a disk driving portion rotating the disk at a predetermined speed, and one or more resonators installed on a lower surface of the disk tray to selectively reduce noise of a predetermined frequency band. Park further shows a disk chucking apparatus 57 holding the disk on the disk driving portion; a data recording/reproducing unit 55 recording data on the disk or reproducing data from the disk.

Claim 6, as described above, Morinaka and park et al show each of the one or more resonators comprises: a through hole penetrating the disk tray and operating as an entrance and a bottle neck of each resonator; and a resonance container surrounding the through hole and having a predetermined volume, the predetermined frequency band being determined according to an area of a profile of the through hole, a length of the bottle neck of the through hole, and a volume of the resonance container.

Claim 9, as described above, Morinaka and Park et al shows a resonator for a disk tray of a disk drive, including: a through hole penetrating the disk tray and operating as an entrance and a bottle neck of the resonator: and a resonance container surrounding the through hole and having a predetermined volume, the resonator being mounted on the disk tray to selectively reduce noise of a predetermined frequency band, the predetermined frequency band being determined according to an area of a profile of the through hole, a length of the bottle neck of the through hole, and the volume of the resonance container, wherein the resonator inherently converts sound energy to thermal energy to reduce a sound pressure level of a resonance frequency to selectively absorb a specific frequency.

Claims 3 and 7, Park et al further shows that the resonator further includes an absorbing member (air) filling the resonance container ([0030]).

Claims 4 and 8, Park et al further shows a bottom surface of the resonance container is open (Fig. 5).

***Allowable Subject Matter***

5. Claims 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

- With regard to claim 10, as the closest reference, the combination of Morinaka (JP 8-203259A) and Park et al (EP 1 207 532 A2) shows a resonator having a resonance container for a disk tray, which is being mounted on the disk tray to selectively reduce noise of a predetermined frequency band, the predetermined frequency band being determined according to an area of a profile of the through hole, a length of the bottle neck of the through hole, and the volume of the resonance container, an absorbing member filling the resonance container to selectively reduce noise of a frequency band; **but fails to show** the absorbing member filling the resonance container to selectively reduce noise of a frequency band higher than the predetermined frequency band.
- Applicant asserts that 10012) the present invention to provide a disk drive having a structure that reduces or removes the dominant noise frequency band which occurs at the peak sound pressure level, from the noise in the disk drive, and also to reduce the overall level of noise ([0012]).

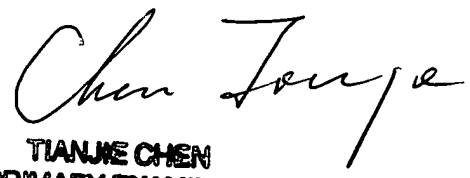
***Conclusion***

6. The prior art made of record in PTO-892 Form and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is 571-272-7570. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TIANJIE CHEN
PRIMARY EXAMINER